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ABSTRACT

The bulletin contains suggestions for secondary level social studies teachers to improve students' reading skills in social studies while at the same time enhancing the learning of social studies content. The materials can be easily adapted for elementary grades. Chapter one describes specific procedures for determining student reading levels. Three levels of reading skills are defined: independent, instructional, and frustration. To determine these levels, the book explains the use of informal reading inventories, the cloze test procedure, and the San Diego Quick Assessment technique. Chapter two discusses ways to estimate the reading level of social studies materials based on average sentence length, average number of syllables in the words, and number of unfamiliar words. Specific readability formulas which make use of these variables are the Fry, SMOG, Flesch, and Dale-Chall. Chapter three suggests ways to improve social studies vocabulary skills, comprehension, and thinking skills. Techniques include teaching words in context; using concrete examples; and having students examine words for meaningful parts. How to administer a directed reading activity is explained, as well as how to ask questions that make use of memory, interpretation, and analysis skills. (AV)

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LEARNING PARTNERS: READING AND SOCIAL STUDIES

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PREFACE

One of the strategies for developing secondary reading programs in Texas through the Right to Read effort has been to focus on reading instruction in the specific content areas. Staff members of the Division of Curriculum Development of the Texas Education Agency have participated in training activities in this area. A cooperative effort between the staffs of the various curriculum development sections has resulted in *Learning Partners* publications in a number of subject areas. *Learning Partners: Reading and Social Studies* was developed through cooperation between the social studies, English language arts, and the business education staffs.

The suggestions and comments in this bulletin are offered to social studies teachers who, through their creativity and ingenuity, can use them to provide a sound basis for improving students' reading skills in social studies while at the same time enhancing the learning of social studies content. The bulletin is being distributed to school superintendents with sufficient copies for each elementary and secondary campus, as well as to Education Service Centers and heads of university departments of education.

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INTRODUCTION

The student's ability to read a wide variety of printed material is basic to virtually all of the social studies skills. Although today's students acquire much of their information through such mass media as television, film, and radio, printed materials still represent one of the most important sources of knowledge and are probably the most commonly used tools of the social studies teacher. Such a wealth of social studies information is derived from books, magazines, newspapers, documents, pamphlets, and other printed materials that students must apply a great number of reading skills to acquire the data necessary for developing meaningful concepts and generalizations.

Social studies uses certain skills and abilities which are necessary for effective general reading in any subject area. But, like other subject areas, it also places special demands on the reading ability of the student. Each social studies teacher faces the challenge of helping students deal with the problems encountered in reading, especially in reading textbooks. The teacher, therefore, should:

- determine the reading levels of each student
- determine by readability formulas the reading levels of textbooks and other reading materials
- match reading materials to student reading levels
- utilize teaching strategies designed to improve student reading skills in order to enhance learning
- keep informed of current teaching practices

Although social studies teachers are knowledgeable in their content area, many recognize their lack of experience in integrating reading with the subject matter. *Learning Partners: Reading and Social Studies* provides direction to help teachers enhance their teaching effectiveness when they seek to improve students' reading skills in social studies.

This bulletin has been designed particularly with secondary teachers in mind; nevertheless, it can be of value to elementary teachers and teacher education students. It is not intended as a definitive study of reading in social studies. Rather, it is designed to summarize much of the growing body of research and writing for the busy teacher who wants to increase knowledge and improve skills but who has limited time to collect and review all the pertinent literature relative to teaching reading skills in social studies.

PROCEDURES FOR DETERMINING STUDENT READING LEVELS

Within a typical social studies classroom the teacher will generally encounter a wide range of reading abilities. For example, there may be as much as a seven-year spread in reading achievement between the best and the poorest readers in an eighth-grade class. Research also reveals that this range increases as students move into high school.

Although many social studies teachers, particularly secondary teachers, are usually not trained in the teaching of reading, they may contribute to the improvement of the student's reading ability in a number of ways. One of the most important is matching the appropriate materials to the reading ability of each student.

To achieve this purpose, the teacher must begin with a knowledge of the student's three reading levels. These are:

- an *independent* reading level, at which the student reads comfortably without assistance
- an *instructional* level, at which the student makes satisfactory progress under teacher guidance
- a *frustration* level, at which the student no longer functions adequately with the materials

Student scores on standardized reading/listening tests may be available to the teacher and are useful in comparing students' reading achievement with national norms. However, they are generally of little use in determining the independent, instructional, or frustration reading level of a particular student.

There are several informal procedures the teacher may use to estimate these reading levels. The following procedures are some of the more practical ones suitable for teachers who have not received training in the teaching of reading.

THE SAN DIEGO QUICK ASSESSMENT

Designed by Margaret LaPray as a preliminary guide, the San Diego Quick Assessment gives the teacher a screening device to begin to estimate a student's reading level.

Use of the San Diego Quick Assessment

- to determine reading vocabulary level
- to detect errors in word analysis

Administration

- Type list of 10 San Diego Quick Assessment words (see p. 4) on index card.
- Begin with list at least two years below the student's grade level assignment.
- Ask student to read the words aloud to you. If he or she makes any errors, drop back to easier lists until no errors are made. This indicates base level.
- Write down incorrect responses.
- Encourage student to read words he or she does not know so that you can determine the student's techniques for identifying words.
- Have student read from increasingly difficult list until he or she makes three errors.

Analysis

- One error indicates student's *independent reading level.*
- Two errors indicates student's *instructional reading level.*
- Three or more errors indicates student's *frustrational reading level.*

THE SAN DIEGO QUICK ASSESSMENT WORDS

PRE-PRIMER	PRIMER	GRADE 1	2	3
see	you	road	our	city
play	come	live	please	middle
me	not	thank	myself	moment
at	with	when	town	frightened
run	jump	bigger	early	explained
go	help	how	sand	several
and	is	always	wide	lonely
lock	work	night	believe	draw
can	are	spring	quietly	since
here	this	today	carefully	straight

4	5	6	7
decided	scanty	bridge	amber
served	certainly	commercial	dominion
amazed	develop	abolish	sundry
silent	considered	trucker	capillary
wracked	discussed	apparatus	impetuous
improved	behaved	elementary	blight
certainly	splendid	comment	wrest
entered	acquainted	necessity	enumerate
realized	escaped	gallery	daunted
interrupted	grim	relativity	condescend

8	9	10	11
capacious	conscientious	zany	galore
limitation	isolation	nausea	rotunda
pretext	molecule	gratuitous	capitalism
intrigue	ritual	linear	prevaricate
delusion	momentous	inept	risible
immaculate	vulnerable	legality	exonerate
acrid	conservatism	amnesty	luxuriate
binocular	jaunty	jerkin	piebald
embankment	inventive	barometer	crunch

INFORMAL READING INVENTORY

An informal reading inventory may be constructed using several books or other materials representing various graded levels of readability. The formulas in the next chapter should be useful in estimating the

readability of the various materials if accurate data on readability is not readily available.

A representative passage of 250 words or more should be selected from three or four grade levels. These graded selections to be read by the student may be chosen on the basis of the results of the vocabulary test. Each selection should be near the beginning of the book. The student should start at a relatively easy level, reading orally to the teacher and then answering comprehension and vocabulary questions based upon the content. If the student is unable to successfully read the first selection, he or she should be moved back to an easier level. The teacher continues to give the student increasingly more difficult selections until the various functional reading levels are determined.

A student who is reading on the *independent* level can recognize 99 percent of all the words read orally in the selection and score at least 90 percent on the comprehension questions. At the *instructional* level, the student must achieve a minimum word recognition score of 95 percent and a comprehension rating of 75 percent or better. The *frustration* level is reached when the student recognizes less than 95 percent of the words read orally and scores below 75 percent on the comprehension section. The value of the oral reading test for students reading above the seventh-grade level is widely questioned. Therefore, it is recommended that a silent reading test be given to most secondary students. Also, the silent test can be administered to the entire class at the same time. For each graded selection, the teacher prepares a written test which covers comprehension and vocabulary. The same rating scale is used.

CLOZE TEST PROCEDURE

One of the easiest and most successful procedures used by subject matter teachers to determine student reading levels is the CLOZE procedure, developed by Wilson L. Taylor in 1953. This procedure is based upon passages, representative of various levels of reading difficulty, which students have not previously encountered. Each passage should contain approximately 520 words and should be representative of the material. A passage which is relatively loaded with names, dates, and numerical data should not be chosen. In counting words in the selected passage, proper nouns and dates should not be counted or used as a blank. Beginning with the second sentence in each passage, every tenth word is deleted and replaced with blanks of equal length. This should result in approximately 50 deletions. Students are instructed to write the correct words in each blank without assistance.

Each passage is typed on separate sheets. A selected passage would look something like the following portion of a sample passage:

> The Hindu joint family has traditionally meant a family conglomerate in which the earnings, resources, and talents of all members were pooled and distributed to the members as needed. It also meant that everyone's food was cooked in _____ same kitchen so that dietary laws were observed by _____. The sons worked with the father on his land _____ in his business; the daughters-in-law assisted the mother-in-law in _____ the house and the unmarried sons and daughters looked _____ the little children, studied or did minor household tasks. _____ person's place was clearly defined, social activity and religious _____ revolved around the family. Outside activity was limited to _____, marriages and occasional trips to the market. There was — _____ still is to a large degree — a sense of _____ or common property. When a new daughter-in-law arrives in _____ family, whatever she brings in her trousseau is no _____ simply hers but part of the jointly held and _____ property of the family. One sister-in-law remarked, "Even if _____ never wear her (the bride's) things, we are all _____ little bit better for having them with us" (that _____, "in the family").
>
> The contemporary Indian urban family is _____ more loosely organized than its rural counterpart. Nonetheless, interdependence _____ interaction within an Indian family is very highly developed. _____ occasional family feuds, the members of an Indian family, _____ those engaged in different professions and occupations, living at _____ ends of the city, of widely different ages and _____, strive to meet and spend their leisure time together.

In scoring the CLOZE procedure, generally only exact work replacements are counted as correct. Each student receives one point for each exact word replacement and is given a percentage score by dividing the total number of points scored by the number of blank spaces. Misspelled words are not considered errors.

The following criteria should be used to estimate the three reading levels:

- Independent Reading Level Above 57%

- Instructional Reading Level 44-57%
- Frustration Level Below 44%

Each student should continue the testing process until enough data have been collected to determine the three levels of reading.

In addition to a knowledge of the student's reading levels, the teacher must also have some idea of the readability of textbooks and other reading materials that are available. There are a number of readability formulas which may be used by the teacher to estimate the relative difficulty of these materials. Some of the more widely used formulas are discussed in the next chapter.

ESTIMATING THE READING LEVEL OF SOCIAL STUDIES MATERIALS

Although readability can and usually does vary a great deal within a book or other printed materials, it is possible to arrive at a reasonably accurate estimate of the general reading level of the material by applying one of several widely used readability formulas. Most of these formulas are based on such factors as:

- number of unfamiliar words
- average sentence length
- average number of syllables in the words
- average number of clauses and phrases in the sentence

Many additional factors also affect readability, and no readability formula can take them all into consideration. However, readability formulas are generally much more accurate than personal opinion.

Four of the most widely used formulas are the Fry, SMOG, Flesch, and Dale-Chall. Each is discussed briefly in this section. For additional details, the reader is encouraged to consult the bibliography.

FRY READABILITY FORMULA

The Fry Formula is frequently used because of its simplicity and reliability. The procedure for applying the formula to a book or a reading selection includes the following steps:

- Select three 100-word passages, one each from the beginning, middle, and end of the material being evaluated. Exclude all numbers and dates from the word count.
- Count the number of sentences in each passage.
- Average the number of sentences from the three passages.
- Count the number of syllables in each passage. Exclude all numbers and dates.

- NOTE: Count the following words as one syllable:

about	anything	father	myself	seven
after	around	funny	never	something
again	away	going	o'clock	today
ago	because	happy	only	under
almost	before	into	open	upon
along	better	little	other	until
also	city	many	over	very
always	ever	mother	people	women
another	every	morning	pretty	yellow
any	family	money	second	yesterday

- Average the number of syllables from the three passages.

- Plot the average number of sentences and the average number of syllables from the three passages on the Fry Readability Graph (See Figure 1).

EXAMPLE: If the average number of syllables is 141 and the average number of sentences is 6.3, the approximate grade level of the reading selection is 7.

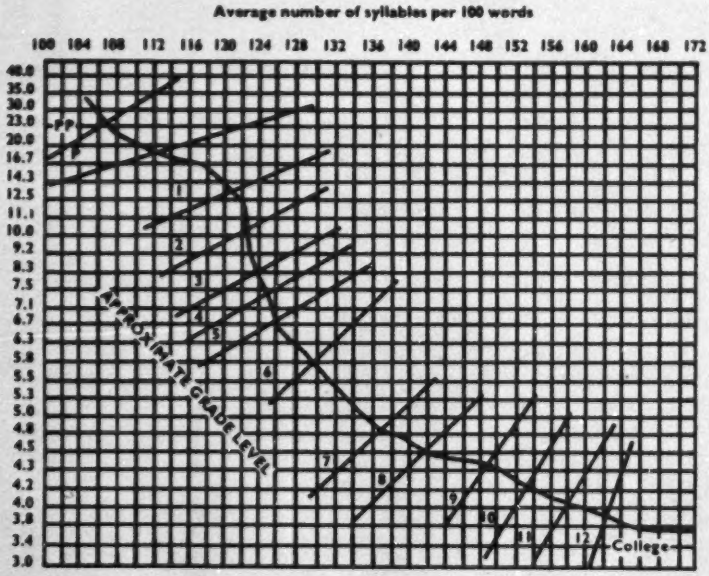

Fig. 1. Fry Readability Graph

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SMOG READABILITY FORMULA

One of the easiest readability formulas to compute is the SMOG Formula, introduced by Edward Fry, Rutgers University Reading Center. It provides a general rule-of-thumb for estimating the relative difficulty of printed materials.

There are four steps in the SMOG Formula

- Select three passages of 10 consecutive sentences, one each from the beginning, middle, and end of the material being evaluated. Count as a sentence any series of words ending with a period, question mark, or exclamation point.

- Count every word of three or more syllables in the 30 sentences selected. Any string of letters or numerals beginning and ending with a space or punctuation mark should be counted if at least three syllables can be distinguished when it is read aloud in context. If a word of three or more syllables is repeated, count each repetition.

- Round off the total number of words with three or more syllables to the nearest perfect square and compute the square root of the number.

- Add 3 to the square root. This gives the approximate grade level for the reading selection.

  EXAMPLE: If the count for a passage is 95, the nearest perfect square is 100 and the square root is 10. Three added to 10 gives an approximate grade level of 13.

FLESCH "READING EASE" FORMULA

The Flesch formula is designed to be used on materials written at the grade 5 level or above and is particularly useful in evaluating the difficulty level of a short passage. It is based on the generalization that the more syllables a word has, the more difficult it is. To use the Flesch formula:

- Select a 100-word passage and count the total number of syllables by saying the words orally and keeping tab.

- Count the number of sentences in the 100-word sample. Be sure to count the sentence in which the 100th word is found. Each unit of thought that is grammatically independent of another sentence or clause is to be counted as a sentence if its end is marked by a period, question mark, exclamation point, semicolon, or colon. For example, count as two sentences: "Members of the commission represent varied interests; and we expect them to contribute much to the program." However, count as one sentence: "There were three people present: the mayor, one commissioner, and the city attorney." The words after the colon are not a separate unit of thought.

- Compute the average number of words per sentence in the passage by dividing the number of words in the passage by the number of sentences in the passage. Include all words in excess of 100 that are in the same sentence as the 100th word.

- Locate the average number of words per sentence and the number of syllables per 100 words for the selected passage in the appropriate columns on the Flesch Reading Ease Scale (See Figure 2). Connect the two points with a diagonal line.

- The point at which the diagonal line intersects the center column indicates the "Reading Ease" score for the selected passage. The "Reading Ease" score is then converted to the approximate grade level by using the table on p. 13.

EXAMPLE: If the average number of syllables per 100 words is 139 and the average number of words per sentence is 15, the reading ease score is 74. This gives an approximate grade level of 7. (See Interpreting the Flesch "Reading Ease" score p. 13.)

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Fig. 2. The Flesch Reading Ease Scale. (Reprinted by permission from the Art of Readable Writing by Rudolf Flesch, New York. Harper & Row, 1949, p. 145.)

Interpreting the Flesch "Reading Ease" Score

"Reading Ease" Score	Approximate Grade Level
90-100	5
80-90	6
70-80	7
60-70	8-9
50-60	10-12
30-50	13-16
0-30	college graduate

Teachers are advised to keep in mind that this is a sampling of only a 100-word passage and may or may not be typical of the whole. To determine the difficulty level of a book, the teacher should take 25 to 30 random samples and determine the mean average score of the samples. Obviously, this would take considerable time. Therefore, this formula is better suited for shorter passages.

Dale-Chall Readability Formula

The Dale-Chall formula is designed to be used on materials written at the fourth grade level and above. It is based upon two factors — word difficulty and sentence length.

The following procedure is followed when applying the formula to a reading selection:

- Select a 100-word passage and count the number of sentences in the passage. Do not count the sentence in which the 100th word appears unless all of the sentence is contained in the 100-word passage.

- Count all of the words in the 100-word passage that do not appear on the Dale List of 3,000 Words. (See "A Formula for Predicting Readability" by Dale and Chall, *Educational Research Bulletin*, January 21, 1948.)

- On the Dale-Chall Computation Ease scale (Figure 3) place a straight edge so that it connects the number of sentences in the left column with the number of words in the right column.

- The point where the straight edge intersects the center column indicates the approximate grade level of the passage.

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Fig. 3. "Dale-Chall Readability Formula: A Computation Ease." (From "Another Practical Note on Readability Formulas," Karl Koenke, Journal of Reading, 15, December 1971, p. 206. Reprinted with the permission of Karl Koenke and the International Reading Association.)

Obviously, readability formulas cannot measure everything and should not be accepted by the teacher as a final, precise measure of readability. There are a number of other factors to be considered by teachers that affect the difficulty or ease with which a student understands written materials. Among these are student interest in the subject, knowledge of the subject, familiarity with the language patterns used by the writer, and self-concept.

Another important readability factor is the organization of the content. Some of the aspects of content organization that should be considered are:

- Is there a sequential development of concepts and generalizations?
- Does the content include a reasonable number of concepts that the student will be able to understand or is it overloaded with new concepts?
- Are the graphics designed to reinforce and clarify the narrative?
- Are introductory paragraphs motivational?
- Do transitional paragraphs explain the relationship of a section to the previous sections?

Some educators believe that giving students a social studies book or other reading materials that they cannot read may cause more harm than providing no book at all. By taking the time to match the reading level of materials and the reading performance of students as much as possible, the social studies teacher can make a major contribution to students' reading success.

IMPROVING READING SKILLS IN SOCIAL STUDIES

Research has lead many educators to conclude that success in general reading ability is no guarantee of success with the various types of reading materials used in the content areas. Results from several studies indicate that although general reading ability and the ability to read in various subject areas have much in common, there are certain reading skills that are especially significant to reading success in each of the content areas.

The social studies teacher can be instrumental in improving student reading ability by providing guidance and experiences designed to develop and improve those skills which are most significant to success in reading social studies materials. These generally fall into two major categories: VOCABULARY SKILLS and COMPREHENSION or THINKING SKILLS.

VOCABULARY SKILLS

Vocabulary competence is generally accepted as being paramount to the mastery of content in a subject. The specialized and technical words of social studies are labels for concepts the student must understand in order to achieve success in communicating ideas pertinent to social studies and in thinking abstractly about them.

According to Lou E. Burmeister in *Reading Strategies for Secondary Teachers*, the social studies teacher can have considerable impact on the student's vocabulary development. The teacher can provide guidance and experiences in the following areas:

- the learning of common words which take on specialized meaning in the context of social studies reading materials (graft, ticket, cabinet, bill, race, trust)
- the learning of new words that are unique to social studies (communism, capitalism, democracy, imperialism)
- the learning of word connotations and the understanding of figurative language and illusions (pink, hot potato, pork barrel, stone wall)
- the learning and understanding of how new words common to social studies enter our language through coining or

- borrowing from other languages (NATO, SALT, tepee, lasso, bungalow, sputnik)

- the learning and understanding of how words over time can change in meaning. (A *villain* was at one time a person from a villa, rather than a scoundrel.)

Because vocabulary power is such an extremely important facet of reading power, instructional time should be consistently devoted to the development of the specialized vocabulary for each of the content areas. Suggestions for vocabulary development in the social studies classroom vary from source to source. However, some of the more frequent suggestions follow.

Pre-Teach "Stopper" Words

A major obstacle to a successful reading assignment is avoided when the teacher goes through the selected passage beforehand and identifies potential problem words. These would include new words, words with multiple meanings, figurative language, and connotations. The teacher makes sure the students understand the concepts the words represent before leaving them on their own to complete the assignment. One can easily imagine the confusion that could arise for the student who encounters a word such as *ticket* in an article on elections and only understands the word in the context of a *traffic ticket* or a *movie ticket*.

Teach Words in Context

As unfamiliar words are introduced, they should be taught in the context of the passage that is to be assigned. Much confusion and many misinterpretations result when students are sent to the dictionary with a list of words in isolation. Also, knowledge of the various types of context clues can be a tremendous help to students as they try to unlock the meaning of a word.

Although there are as many as 10 or more types of context clues, generally four types are used:

- Definition or explanation clues — an outright explanation or definition of a word's meaning given to assist the reader
  EXAMPLE: The stockholder's share of the company's profits is called a *dividend*.

- Restatement of meaning clue — the meaning related in other words
  EXAMPLE: The problem of *farm surpluses*, or having more food than is needed, is one of the major agricultural problems of the U.S.

- Example clue — an example given near the word to help illuminate the meaning
  EXAMPLE: *Trade goods*, such as beads, brightly colored cloth, kettles, and knives, were essential to the success of the fur traders.

- Comparison or contrast clue — the new word compared or contrasted with another idea
  EXAMPLE: Much of the land on the plateau is too *arid* for farming, but the river supplies adequate water in the valley for crops.

Use Concrete Examples

New words have much more meaning for students when concrete examples and first-hand experiences are used to illustrate them. Pictures, objects, dramatizations, models, and audiovisual aids should be used whenever possible. A field trip to the courthouse can give much more meaning to the word *jury* than looking the word up in a dictionary. Likewise, the word *ballot* has much more meaning for the student who has the opportunity to examine a sample ballot. Opportunities should also be provided for students to relate a new word to their own experiences and to give illustrations of the word from these experiences.

Have Students Examine Words for Meaningful Parts

After taking a quick glance at a long word such as *circumnavigate* that looks unfamiliar, some readers will skip over the word. The teacher can help such students by making them aware that long words have parts and that often prefixes and suffixes can be removed until a recognizable root word — in this case, *navigate* appears. Every time students are provided the opportunity to analyze parts of difficult words, they build a working knowledge of prefixes, suffixes, and root words. When students have a working knowledge of common Greek and Latin word parts and learn to use them in combination with context clues, they greatly expand the potential of their vocabulary power.

Encourage Students to Work Out the Pronunciation of Forbidding Looking Words, Syllable by Syllable

The teacher can help students attack unknown polysyllabic words by encouraging them to break the words down into syllables. Students should learn that every syllable contains a vowel sound and that the number of syllables in a word is determined by the number of vowel sounds. For example: totalitarian to/ tal/ i/ tar/ i/ an. If a student can distinguish *syllables by hearing a word pronounced, then visual* discrimination can be learned.

Use Word Origins to Stimulate Interest

Working the origin of a selected word into the context of a reading assignment can create interest and often fix the meaning of the new word in the minds of the students. Students in a social studies class are more likely to remember the term *gerrymander* if they hear the story of how an election district was drawn in the shape of a salamander during the term of Governor Gerry of Massachusetts. Likewise, students are more likely to remember the meaning of *havoc* if they learn that during the Middle Ages the word was a war cry, Havok!, meaning attack, sack, destroy, and devastate.

COMPREHENSION — THINKING SKILLS

Reading success involves much more than recognizing the meaning of individual words and pronouncing them correctly. It requires students to think and to use their imaginations. Reading authorities differ in their opinions of the essential comprehension or thinking skills heeded for effectively reading social studies materials. However, some of the basic skills on which there is general agreement are:

- Following directions
- Recalling facts, dates, and other details
- Recognizing and recalling main ideas
- Recognizing and recalling sequence
- Perceiving unstated relationships
- Making comparisons and contrasts

- Drawing inferences
- Recognizing the author's tone, mood, and intent
- Recognizing a situation in which a previously learned principle applies and utilizing the principle successfully
- Drawing conclusions or making generalizations
- Making evaluations

GIVING DIRECTION

The extent to which some students achieve success in comprehending a reading assignment may depend upon how well the teacher has given direction for the reading assignment. This area is one of the many in which the social studies teacher can contribute to reading success without specialized training in reading.

There are a number of models or guidelines for making reading assignments. However, due to the need for brevity only two will be discussed: the DIRECTED READING ACTIVITY and the SQ3R.

The Directed Reading Activity

The directed reading activity is designed to help students who are reading materials that are on their instructional level. The plan, as generally used, consists of the following phases:

- Preparation for reading
- Directed reading and discussion
- Enrichment and follow-up activities

The first phase is concerned with three aspects of preparing the students for reading the assigned passages. One aspect is to explore the student's background in regard to information related to the reading assignment, expanding it when it is apparent the background is insufficient for the assignment. In deciding what would be relevant background material to present to students, the teacher should contemplate such questions as: Why are students being asked to read

this selection? What should be stressed in discussion of the material? What do the students already know about the subject that can be discussed before the material is read? What gaps need to be filled in their experiential background?

The second aspect of the preparation phase is to present new vocabulary words in the assigned reading material. The teacher should look over the material to determine key words that should be stressed and then decide how to introduce the words to the students. This aspect is discussed under Vocabulary Skills, p. 16.

The third aspect of the preparation phase of the directed reading lesson is to establish the purposes for reading the assigned material. Simply telling students to read certain pages in the text for tomorrow is usually not enough. The student who has a definite purpose for reading a selection will usually read with better understanding. These purposes should be specific and clearly stated but not overly detailed in an attempt to cover everything in the material.

During the second phase of the directed reading activity, the student, with directions from the teacher, reads the assignment and is asked to participate in a discussion of the material presented in the reading assignment or in some other form of response activity. Educators have long stressed the value of question and discussion techniques. However, recent studies show that too often questions used in the classroom do not require students to think at the higher levels of cognition. They also indicate that discussion techniques often consist of little more than asking a recall question with little discussion of the answers and related facts. Additional research leads many educators to believe that teachers can control the type and level of intellectual activity in the classroom by the type of questions used and that students will develop higher skills of thinking if given experience in answering various types of questions. These different types or levels of questions are discussed beginning on p. 23.

The last phase of the directed reading assignment is concerned with reinforcing and expanding the skills and concepts introduced in earlier portions of the lesson. Such activities, if planned carefully, can serve as the background experiences needed by students to deal with subsequent assignments. The possibilities for significant enrichment activities are limited only by the resourcefulness of the teacher.

SQ3R*

Another technique frequently used for directing subject-matter reading which should give greater retention of information in the material read is SQ3R.

S, for *Surveying* — The reader is to make an overview of the material to be read by noting a number of things that the material may contain, namely:

- Chapter title(s)
- Chapter section heading
- Specific quotes
- Italicized phrases
- Boldface printing
- Aids such as graphs, charts, diagrams, maps, and tables

Q, for *Questioning* — Keeping the assignment in mind, the reader now formulates questions that he or she believes the material to be read can help answer. A concentrated effort is made to set up questions that are directly related to the assignment being pursued.

R, for *Reading* — The student will now read the material, noting the parts of the material that appear to be most appropriate to the specific assignment. Some parts will be read initially with more care than other parts, for the reader realizes the material is more pertinent to the assignment. The rate of reading will vary as the difficulty and the need for the information the material contains varies.

R, for *Reflection* — Students are encouraged to think about the information they have found as they relate it to the questions previously formulated. Through this process, the reader can sense areas that need more thorough treatment — perhaps, rereading.

*Arnold Burron, and Amos Claybaugh, *Using Reading to Teach Subject Matter.* (Columbus, Ohio: Charles E. Merrill Books, Inc., 1975.)

R, for *Rereading* — The reflection process will tend to point up areas covered in the material read initially that need further treatment. This material may be reread with a concentrated effort to "dig" for the information it contains that is relevant to the specific assignment.

Students who read at the independent reading level are able to complete their assignments by the SQ3R method after receiving a minimum of directions from the teacher. For students who read below the independent reading level, more instruction from the teacher is needed. The first step of SQ3R, surveying, which includes analysis of each facet of an assignment, is adequate for most subject matter. Step two, questioning, evolves naturally as part of the survey, or the teacher might use the questions usually found at the end of a chapter to help students clarify concepts in the assignment.

ASKING QUESTIONS

Another way the social studies teacher can contribute to the development of comprehension or thinking skills is by carefully choosing the type of questions used relative to a reading assignment. Many educators conclude that students will develop higher levels of thinking skills if given experience in answering various types of questions involving the various cognitive levels.

With this idea in mind, several teachers under the leadership of Norris M. Sanders developed a taxonomy of questions based upon Benjamin S. Bloom's *Taxonomy of Educational Objectives*. The results of this work were published by Harper and Row in 1966 in a book entitled *Classroom Questions: What Kinds?* Listed below are definitions and examples of the seven levels of questions identified by Sanders and his colleagues. These can be used as a guide for developing questions which call for the various levels of thinking in order to improve student thinking skills.

Memory Level

Questions require the student to recall or recognize information accumulated from past experiences.

EXAMPLE: Students have read that Washington, D.C. is the capital of the United States. The teacher asks, "What is the name of the capital of the United States?"

Translation Level

Questions require the student to change information into a different symbolic form or language. They describe an idea and instruct the student to express the idea in a different form of communication with substantially the same meaning. Common types of questions at the translation level relate to changing information from one verbal form to another and from a verbal form to a pictorial or graphic form, matching paraphrased descriptions, and sociodramas.

EXAMPLE: The class reads a passage which contains a political cartoon. The students are instructed to write a paragraph which presents the argument depicted in the cartoon.

Interpretation Level

Questions require the student to perceive relationships among given parts of a communication (facts, generalizations, definitions, values, or skills). The student makes use of the "inductive leap" to see the relationship that exists. Various formats for interpretation questions are: like or different, degree of similarity, comparison of specific points, analogies, irrelevant item, and scrambled outline.

EXAMPLE: Students have studied a definition of monopoly. They are asked to write a paragraph on each of the following telling the extent to which each is a monopoly in their community.

a. Garbage collection
b. Barbering service
c. Motion picture entertainment
d. Telephone service

Application Level

Questions are similar to interpretation questions in that students are to use previously learned ideas in problems that are new to the students. However, application goes one step further. Students must show that they can use an idea not when they are told to do so, but when the problem demands it. In other words, application calls for the transfer of knowledge to new situations. Students must select and use the appropriate facts, generalizations, values, and skills to solve the new problem.

EXAMPLE: A class has studied the main regions of the United States. The study included consideration of climate, topography, crops, population, vegetation, manufacturing, and agriculture. The teacher displays six large landscape pictures and

gives the following instruction: "Study each picture carefully and then name a state in which you think the picture might have been taken. Give as many reasons as you can why you think your location might be in the state you name."

Analysis Level

Questions require students to solve problems with an awareness of the thinking processes they are using. The student needs to identify the parts, and the relationships among the parts, of a communication to realize that rules of reasoning apply to the relationships identified and to determine consciously whether the relationships satisfy the appropriate rules of reasoning.

EXAMPLE: The class is given the following assignment:

Listed below are figures on life expectancy at birth in Massachusetts, the only state to gather these figures during the period from 1855 to 1902.

Life Expectancy at Birth in Massachusetts	In Years
1900-1902	46.07
1893-1897	44.09
1890	42.50
1878-1882	41.74
1885	38.7

Check all of the conclusions that are justified for a historian to draw and be prepared to defend your choices. Assume the figures are reasonably accurate.

___ The life expectancy from birth in Massachusetts increased 8.37 years from 1885 to 1902.
___ Life expectancy rose almost 10 years in Massachusetts from 1885-1902 and probably rose comparably in other New England states.
___ Life expectancy rose in New England from 1885-1902.
___ Life expectancy was on the rise in the U.S. from 1885 to 1902.

Synthesis

Questions require the student to combine parts of his or her past experience to create an original product (a unique communication, a

plan, or abstract relationship). Great freedom is given students in deciding what is to be created and how it is to be created. A synthesis question never has one correct response. There are always many good answers which students may work out.

EXAMPLE: Students have read and studied what happened at the Boston Massacre. They are asked to write a paragraph telling what each of the following people might have said on hearing the news of the Boston Massacre.

a. A Tory
b. A member of the Sons of Liberty
c. A British soldier

Evaluation

Questions require the student to make a value judgment of some product, communication, event, or situation. The student must establish the standards appropriate to judging an idea or object and determine how closely the idea or object meets the standards. In the answer, the student gives the judgment and tells the considerations which led him or her to make the judgment.

EXAMPLE: Students have read and studied about the closing period of the Republic of Texas and annexation of Texas by the United States. They are asked: "Did Texas make the right decision in keeping her public lands and in paying her own debt when annexed? Why or why not?"

There are some qualifications that teachers should keep in mind as they apply this taxonomy to the development of questioning strategies.

- The term *question* is used broadly and includes a student activity as well as interrogative statements.

- The classification of a question is dependent on the teaching which has preceded it. What might be an evaluation level question in one class could be a memory level question in another if instruction related to the question has preceded it.

- In progressing to each succeeding classification, there will be elements of the preceding types of thinking required. For instance, translation requires memory; interpretation requires translation and memory. In practice a question may be classified at the highest level on the taxonomy for which it qualifies.

INTERPRETING GRAPHIC AIDS

Some students tend to view maps, charts, graphs, and pictures as fillers which they may skip in order to shorten a reading assignment. Unfortunately, these students fail to perceive that these are aids which the author uses to provide additional information or to illustrate a concept so that it will be easier for the reader to understand.

Successful use of graphic aids is especially significant to the comprehension of the variety of reading materials in the social studies classroom. To successfully use graphic aids, the student must understand what is stated directly in the graphic aid and what is implied. The reader must first determine what information the graphic aid conveys. Then he or she must seek deeper meaning through inferences, generalizations, and conclusions, drawing upon the data presented and his or her own experiential background. The social studies teacher can assist students by calling attention to the importance of graphic aids through various teaching strategies that require the student to use the aids, by giving specific instructions on how to use various types of graphic aids, and by structuring various levels of questions relative to information presented in the aids. Following is one example of how this could be done with data presented in a table.

Statement of Facts:

The following table represents the relationship between the yearly income of certain families and the medical attention family members receive.

Family Income	Percent of family members who received medical attention during the year
Under $1,200	53
$1,200 to $3,000	60
$3,000 to $5,000	67
$5,000 to $10,000	76
Over $10,000	86

Sample Questions:

Memory: What percent of families with incomes between $3,000 and $5,000 received medical attention during the year?

Translation: Present the information given in the table in a graph.

Interpretation: What generalization can you make about the relationship between the percent of family members receiving medical attention and the family's income?

Application: Would you expect the same generalizations made in the previous question to be true for the amount spent for food? Would the ratio between the lowest income group and the highest income group be the same, greater, or smaller?

Analysis: "Members of families with smaller incomes are healthier than members of families with larger incomes." Discuss this conclusion.

Synthesis: Devise a plan to equalize medical services. What additional information would you want to obtain to develop and support your plan?

Evaluation: There should be equal opportunity for medical attention even if this means a government supported medical profession. Do you believe that this conclusion is fair?

Thus, without specialized training, the social studies teacher can contribute to students' development of comprehension-thinking skills by giving effective directions for reading assignments, by choosing the appropriate levels of questions, and by teaching students to interpret graphic aids.

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